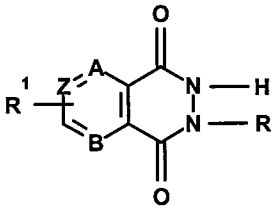
AMENDMENTS TO THE CLAIMS

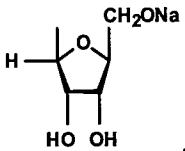
This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-70. (Cancelled)

71. (Currently amended) A method for treatment of ~~diseases caused by~~ reversible abnormal changes [[of]] in pH of ~~nucleus and non-nucleus~~ nucleated and non-nucleated cells ~~of the living body~~, said method comprising administering to a subject in need of such treatment a pharmaceutically-effective amount of a biologically-active compound ~~having biological activity like as activity of a compound of a purine system of a body~~ in order to normalize the endocellular pH to the physiologically acceptable levels, wherein said biologically-active compound ~~is a cyclic bioisostere of derivatives of a purine system having~~ has a general structural formula:





where R is selected from the group consisting of , Li, Na, and K;

R^1 is selected from the group consisting of -H, $-NH_2$, -Br, -Cl, -OH, and -COOH;

B is selected from the group consisting of -N=, -CH=, and $-CR^1=$;

Z is selected from the group consisting of -CH=, $-CR^1=$, and -N=; and

A is selected from the group consisting of -N=, -CH=, and $-CR^1=$;

wherein when A is -N=, then B is -N= and Z is $-CR^1=$, and wherein when A is $-CR^1=$, then B is -CH= and Z is -CH=,

and pharmacologically acceptable salts thereof.

72-81. (Cancelled)

82. (Currently amended) The method as claimed in Claim 71, wherein the reversible abnormal changes in pH of nucleated and non-nucleated cells is caused by a disease [[is]] selected from the group consisting of chronic pneumonia, tissue hypoxia, arterial hypoxia, pleurisy, obstructive bronchitis, anemias, peritonitis, ~~pancreatic~~ pancreatitis, febrile state, and rheumatoid arthritis.

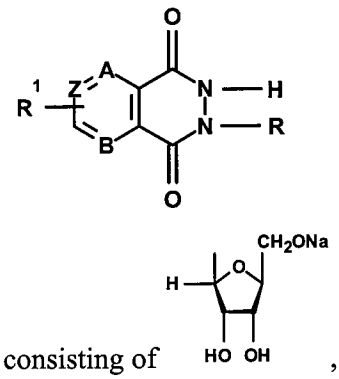
83. (Original) The method as claimed in Claim 71, wherein the treatment is fever therapy.

84. (Currently amended) The method as claimed in Claim 71, wherein the reversible abnormal changes in pH of nucleated and non-nucleated cells is caused by ~~disease is~~ radiation sickness.

85. (Currently amended) The method as claimed in Claim 71, wherein the reversible abnormal changes in pH of nucleated and non-nucleated cells is caused by a disease [[is]]

selected from the group consisting of insulin resistance, [[.]] hyperglycemia, hyper fatty acidemia ~~academia~~, and hyperinsulinemia.

86. (Currently amended) A method for treatment of ~~diseases caused by~~ oxygen deficiency [[of]] in ~~nucleus and non-nucleus~~ nucleated and non-nucleated cells ~~of living body~~, said method comprising administering to a subject in need of such treatment a pharmaceutically-effective amount of a biologically-active compound ~~having biological activity like as activity of a compound of a purine system of a body, wherein said biologically active compound is a cyclic bioisoster of derivatives of a purine system~~ having a general structural formula:



where R is selected from the group consisting of , Li, Na, and K,

R^1 is selected from the group consisting of -H, $-NH_2$, -Br, -Cl, -OH, and -COOH;

B is selected from the group consisting of -N=, -CH= and $-CR^1=$;

Z is selected from the group consisting of $-CR^1=$, -CH= and -N=; and

A is selected from the group consisting of -N=, -CH= and $-CR^1=$;

wherein when A is -N= , then B is -N= and Z is $-CR^1$[[-]] =, and wherein when A is -CR^1=, then B is -CH= and Z is -CH=,

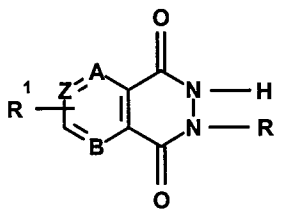
and pharmacologically acceptable salts thereof.

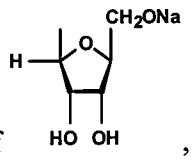
87. (Currently amended) The method as claimed in Claim 86, wherein the oxygen deficiency in nucleated and non-nucleated cells ~~disease~~ is caused by bronchial asthma.

88. (Currently amended) The method as claimed in Claim 86, wherein the oxygen deficiency in nucleated and non-nucleated cells ~~disease~~ is caused by ischemic heart disease ~~diseases of heart~~.

89. (Currently amended) The method as claimed in Claim 86, wherein the oxygen deficiency in nucleated and non-nucleated cells ~~disease~~ is caused by brain ischemia ~~ischemic diseases of human brain~~.

90. (Currently amended) A method for treatment of ~~diseases caused by~~ excessively-formed free radicals in ~~nucleus and non-nucleus~~ nucleated and non-nucleated cells ~~of a living body~~, said method comprising administering to a subject in need of such treatment a pharmaceutically-effective amount of a biologically-active compound ~~having biological activity like as activity of a compound of a purine system of a body, wherein said biologically active compound is a cyclic bioisoster of derivatives of a purine system~~ having a general structural formula:



where R is selected from the group consisting of 

, Li, Na, and K, [[and]]

R^1 is selected from the group consisting of -H, $-NH_2$, -Br, -Cl, -OH, and -COOH;

B is selected from the group consisting of -N=, -CH= and $-CR^1=$;

Z is selected from the group consisting of $-CR^1=$, -CH= and -N=; and

A is selected from the group consisting of -N=, -CH= and $-CR^1=$;

wherein when A is -N=, then B is -N= and Z is $-CR^1$[[-]] =, and wherein when A is -$CR^1=$, then B is -CH= and Z is -CH=,

and pharmacologically acceptable salts thereof.

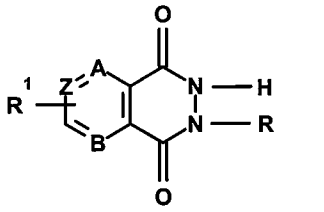
91. (Currently amended) The method as claimed in Claim 90, wherein the excessively-formed free radicals in nucleated and non-nucleated cells are caused by a disease [[is]] selected from the group consisting of chronic diffuse glomerulonephritis, sepsis, and cystic fibrosis.

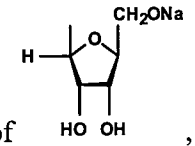
92. (Currently amended) The method as claimed in Claim 90, wherein the excessively-formed free radicals in nucleated and non-nucleated cells are caused by ~~disease is~~ tuberculosis.

93-96. (Cancelled)

97. (Currently amended) A method for treatment of ~~diseases caused by increasing the~~ increased aggregation of thrombocytes and erythrocytes, said method comprising administering to a subject in need of such treatment a pharmaceutically-effective amount of a biologically-

active compound ~~having biological activity like as activity of a compound of a purine system of body, wherein the biologically active compound is a cyclic bioisoster of derivatives of a purine system~~ having a general structural formula:





where R is selected from the group consisting of , Li, Na, and K,

R^1 is selected from the group consisting of -H, $-NH_2$, -Br, -Cl, -OH, and -COOH;

B is selected from the group consisting of -N=, -CH= and $-CR^1=$;

Z is selected from the group consisting of $-CR^1=$, -CH= and -N=; and

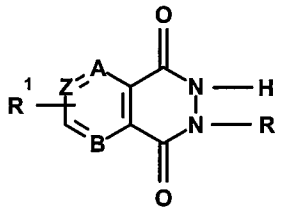
A is selected from the group consisting of -N=, -CH= and $-CR^1=$;

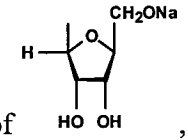
wherein when A is -N=, then B is -N= and Z is $-CR^1$[[-]] =, and wherein when A is -CR^1=; then B is -CH= and Z is -CH=,

and pharmacologically acceptable salts thereof.

98. (Currently amended) The method as claimed in Claim 97, wherein the <u>increased aggregation of thrombocytes and erythrocytes is caused by a</u> disease [[is]] selected from the group consisting of cholelithiasis, inherited hemoglobinopathy, erythrocyte membranepathy, trombophlebiti, thrombosis, thrombocytosis, thrombocytopenia, cerebral blood flow abnormalities, instable angina, myocardial infarction, child's neural disorder, ischemic stroke, and migraine.

99. (Currently amended) A method of hepatoprotection ~~hepatoprotective action~~, said method comprising administering to a subject in need of such protection a pharmaceutically-effective amount of a biologically-active compound ~~having biological activity like as activity of a compound of a purine system of body, wherein this biological active compound is a cyclic bioisoster of derivatives of the purine system~~ having a general structural formula:





where R is selected from the group consisting of , Li, Na, and K, [[and]]

R^1 is selected from the group consisting of -H, $-NH_2$, -Br, -Cl, -OH, and -COOH;

B is selected from the group consisting of -N=, -CH= and $-CR^1=$;

Z is selected from the group consisting of $-CR^1=$, -CH= and -N=; and

A is selected from the group consisting of -N=, -CH= and $-CR^1=$;

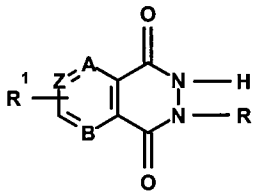
wherein when A is -N= , then B is -N= and Z is $-CR^1$[[-]] =, and wherein when A is -CR^1=; then B is -CH= and Z is -CH=,

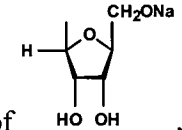
and pharmacologically acceptable salts thereof.

100. (Currently amended) The method as claimed in Claim 99, wherein damage to the liver arises from ~~the disease is selected from the group consisting of~~ alcoholic intoxication, drug intoxication, persistent vomiting, hepatitis, hepatocirrhosis, infiltrative liver injury,

hepatocellular carcinoma, cholestasis ~~icluding~~ of pregnancy ~~pregnants~~, bile-duct obstruction, cholangitis, nutmeg liver, [[and]] or cardiac cirrhosis.

101. (Currently amended) A method of prophylaxis of decreasing the aggregation of thrombocytes and erythrocytes, said method comprising administering to a subject in need of such treatment a pharmaceutically-effective amount of a biologically-active compound ~~having biological activity like as activity of a compound of a purine system of body, wherein the biologically-active compound is a cyclic bioisoster of derivatives of the purine system~~ having a general structural formula:





where R is selected from the group consisting of , Li, Na, and K,

R^1 is selected from the group consisting of -H, $-NH_2$, -Br, -Cl, -OH, and -COOH;

B is selected from the group consisting of -N=, -CH= and $-CR^1=$;

Z is selected from the group consisting of $-CR^1=$, -CH= and -N=; and

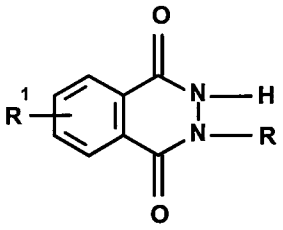
A is selected from the group consisting of -N=, -CH= and $-CR^1=$;

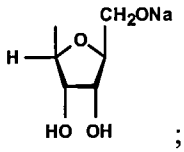
wherein when A is -N= , then B is -N= and Z is $-CR^1$[[-]] =, and wherein when A is -CR^1=; then B is -CH= and Z is -CH=,

and pharmacologically acceptable salts thereof.

102. (Currently amended) The method as claimed in Claim 101, wherein the increased aggregation of thrombocytes and erythrocytes is caused by a disease [[is]] selected from the group consisting of cerebral blood flow abnormalities, thrombosis, venous embolism caused by ~~after~~ surgery ~~with vessel~~, ischemic stroke, and migraine.

103. (Original) The method as claimed in any of Claims 71, 86, 90, 93, 95, 97, 99 or 101, wherein the cyclic bioisostere is a derivative of benzo[d]-3H-pyridazine-1,4-dione, having a general formula



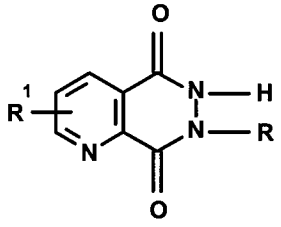
where R selected from the group consisting of the atom of Li, Na, K, and 

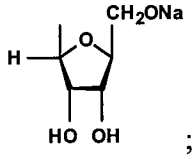
; and R^1 is selected from the group consisting of -H, -NH_2, -Cl, OH, and -COOH.

104. (Original) The method as claimed in any of Claims 71, 86, 90, 93, 95, 97, 99, or 101, wherein the biologically-active compound is selected from the group consisting of: sodium salt of 2-(β-D-ribofuranosile)benzo[d]-3H-pyridazine-1,4-dione , sodium salt of 5-amino-2-(β-D-ribofuranosile)benzo[d]-3H-pyridazine-1,4-dione , sodium salt of 6-amino-2-(β-D-ribofuranosile)benzo[d]-3H-pyridazine-1,4-dione , sodium salt of 5-chlorine-2-(β-D-ribofuranosile)benzo[d]-3H-pyridazine-1,4-dione , disodium salt of 5-hydroxy-2-(β-D-ribofuranosile)benzo[d]-3H-pyridazine-1,4-dione , lithium salt of 5-amino-benzo[d]-3H-

pyridazine-1,4-dione , sodium salt of 5-amino-benzo[d]-3H-pyridazine-1,4-dione , potassium salt of 6-amino-benzo[d]-3H-pyridazine-1,4-dione , disodium salt of 5-hydroxy-benzo[d]-3H-pyridazine-1,4-dione , and disodium salt of 6-carboxy-benzo[d]-3H-pyridazine-1,4-dione.

105. (Withdrawn) The method as claimed in any of Claims 71, 86, 90, 93, 95, 97, 99, or 101, wherein the cyclic bioisostere is a derivative of pyrido[2,3-d]-6H-pyridazine-5,8-dione, having a general formula





where R is selected from the group consisting of the atom of Li, Na, K, and ; and R^1 is selected from the group consisting of -H, -NH_2, -Br, -OH, and -COOH.

106. (Original) The method as claimed in any of Claims 71, 86, 90, 93, 95, 97, 99, or 101, wherein the biologically-active compound is selected from the group consisting of:

sodium salt of 7-(β-B-ribofuranosile)pyrido[2,3-d]-6H-pyridazine-5,8-dione,

sodium salt of 4-amino-7-(β-B-ribofuranosile)pyrido[2,3-d]-6H-pyridazine-5,8-dione ,

sodium salt of 3-bromine-7-(β-D-ribofuranosile)pyrido[2,3-d]-6H-pyridazine-5,8-dione,

disodium salt of 4-hydroxy-7-(β-D-ribofuranosile)pyrido[2,3-d]-6H-pyridazine-5,8-dione ,

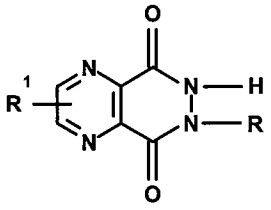
disodium salt of 3-carboxy-7-(β-D-ribofuranosile)pyrido[2,3-d]-6H-pyridazine-5,8-dione ,

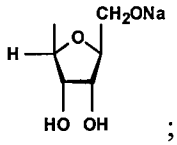
lithium salt of pyrido[2,3-d]-6H-pyridazine-5,8-dione,

sodium salt of pyrido[2,3-d]-6H-pyridazine-5,8-dione , and

potassium salt of pyrido[2,3-d]-6H-pyridazine-5,8-dione.

107. (Withdrawn) The method as claimed in any of Claims 71, 86, 90, 93, 95, 97, 99, or 101, wherein the cyclic bioisostere is a derivative of pyrazine[2,3-d]-6H-pyridazine-5,8-dione, having a general formula



where R is selected from the group consisting of the atom of Li, Na, K, and  ; and R^1 is selected from the group consisting of -H, -NH_2, -Br, -OH, and -COOH.

108. (Original) The method as claimed in any of Claims 71, 86, 90, 93, 95, 97, 99, or 101, wherein the biologically-active compound is selected from the group consisting of:

sodium salt of 7-(β-D-ribofuranosile)pyrazine[2,3-d]-6H-pyridazine-5,8-dione ,

sodium salt of 2-amino-7-(β-D-ribofuranosile)pyrazine[2,3-d]-6H-pyridazine-5,8-dione ,

sodium salt of 3-amino-7-(β-D-ribofuranosile)pyrazine[2,3-d]-6H-pyridazine-5,8-dione ,

sodium salt of 3-bromine-7-(β-D-ribofuranosile)pyrazinc[2,3-d]-6H-pyridazine-5,8-dione ,

disodium salt of 2-hydroxy-7-(β-D-ribofuranosile)pyrazine[2,3-d]-6H-pyridazine-5,8-dione ,

disodium salt of 2-carboxy-7-(β-D-ribofuranosile)pyrazine[2,3-d]-6H-pyridazine-5,8-dione ,

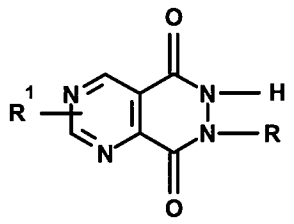
lithium salt of pyrazine[2,3-d]-6H-pyridazine-5,8-dione ,

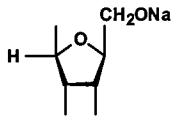
sodium salt of pyrazine[2,3-d]-6H-pyridazine-5,8-dione ,

potassium salt of 3-bromine-pyrazine[2,3-d]-6H- pyridazine-5,8-dione , and

sodium salt of 2-amino-pyrazine[2,3-d]-6H-pyridazine-5,8-dione.

109. (Withdrawn) The method as claimed in any of Claims 71, 86, 90, 93, 95, 97, 99, or 101, wherein the cyclic bioisostere is a derivative of pyrimido[4,5-d]-6H-pyrodazine-5,8-dione, having a general formula



where R is selected from the group consisting of the atom of Li, Na, K, and  ; and R^1 is selected from the group consisting of -H, $-NH_2$, -Br, -OH, and -COOH .

110. (Original) The method as claimed in any of Claims 71, 86, 90, 93, 95, 97, 99, or 101, wherein the biologically-active compound is selected from the group consisting of:

sodium salt of 7-(β-D-ribofuranosile)pyrimido[4,5-d]-6H-pyridazine-5,8-dione,

sodium salt of 2-amino-7-(β-D-ribofuranosile)pyrimido[4,5-d]-6H-pyridazine-5,8-dione,

sodium salt of 4-amino-7(β-D-ribofuranosile)pyrimido[4,5-d]-6H-pyridazine-5,8-dione ,

sodium salt of 2-bromine-7-(β-D-ribofuranosile)pyrimido[4,5-d]-6H-pyridazine-5,8-dione ,

sodium salt of 4-hydroxy-7-(β-D-ribofuranosile)pyrimido[4,5-d]-6H-pyridazine-5,8-dione ,

sodium salt of 4-carboxy-7-(β-D-ribofuranosile)pyrimido[4,5-d]-6H-pyridazine-5,8-dione ,

lithium salt of pyrimido[4,5-d]-6H-pyridazine-5,8-dione ,

sodium salt of 2-amino-pyrimido[4,5-d]-6H-pyridazine-5,8-dione , and

potassium salt of 4-bromine-pyrimido[4,5-d]-6H-pyridazine-5,8-dione.